DOCUMENT RESUME

ED 390 147 EA 027 254

AUTHOR Sutton, Joe P.; de Oliveira, Paulo C. M.
TITLE Differences in Critical Thinking Skills among Students Educated in Public Schools, Christian Schools, and Home Schools.
PUB DATE Apr 95
NOTE 22p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 18-22, 1995).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Christianity; *Church Related Colleges; College Freshmen; Comparative Analysis; *Critical Thinking; Higher Education; High Schools; Home Schooling; Prior Learning; *Private Colleges; Private Education; Private Schools; Public Schools

ABSTRACT

Although ample research has investigated critical-thinking skills among college students from state-supported higher education institutions of nonreligious affiliation, virtually none has examined critical thinking among students enrolled in private Christian colleges, nor the effect of prior educational setting on students' critical-thinking skills. This paper presents findings of a study that compared critical-thinking skills of a nationally representative sample of 789 Christian college freshmen who graduated from public schools, Christian schools, Accelerated Christian schools, and home schools. Dependent variables included students' mean scores on the California Critical Thinking Skills Test (CCTST), and the independent variables were the students' prior educational setting. Analyses revealed no statistically significant differences in various critical-thinking skills among the student groups. In addition, students demonstrated no significant differences in the kinds of critical-thinking skills, including those for deductive and inductive reasoning. Four tables are included. (Contains 42 references.) (LMI)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 390 147

Differences in Critical Thinking Skills Among Students Educated in Public Schools, Christian Schools, and Home Schools

Joe P. Sutton, Ph.D.

Paulo C. M. de Oliveira, Ed.D.

Bob Jones University

Paper Presented at the 1995 Annual Meeting of the

American Educational Research Association

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

J. Sutton

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

In Press, *Home School Researcher*

EA027254

BEST COPY AVAILABLE

Abstract

Although ample research has investigated critical thinking skills among college students from state-supported higher education institutions of non-religious affiliation, virtually none has examined critical thinking among students enrolled in private, *Christian* colleges. Moreover, researchers have examined the influence of a number of variables on critical thinking including grade point average, college education, and computer programming courses. Yet no study to date has examined the effect of prior educational setting on students' critical thinking skills. This study compared critical thinking skills of a nationally representative sample of 789 Christian college-age students who graduated from public schools, Christian schools, Accelerated Christian schools (ACE), and home schools. Analyses revealed no statistically significant differences in various critical thinking skills among the student groups.

Differences in Critical Thinking Skills Among Students Educated in Public Schools, Christian Schools, and Home Schools

In order for America to survive in this competitive world, its educational system must teach students how to think. Unfortunately, current educational systems have guided students into acquiring information, but educators in general have not taught students how to use it in their lives. Students may read a variety of materials, but they do not develop skills to examine the principles, values and facts encountered in their readings (Grice & Jones, 1989; Newmann, 1988). With the emphasis today on academic achievement (as opposed to cognitive learning outcomes), many students complete their basic courses with only a superficial understanding of what they have learned.

As a result, our schools have produced impulsive thinking students who rely on rote memory, have inconsistent thinking patterns, and are unable to cope with the intellectual demands of today's society (Paul, 1990). The ill effects of an educational system that does not promote the teaching of critical thinking skills goes far beyond the grade school years, however. The fragmented and impractical education that many present day students are receiving has hindered them from developing the ability to solve problems and from finding and holding good jobs. Only a small percentage of graduates who are successful in finding attractive jobs exhibit critical thinking abilities which are considered a must in today's global economy (Rankin, 1991; Marzano & Arredondo, 1986).

According to Norris (1985), critical thinking is not an option but an educational ideal. The teaching of critical thinking will develop personal accountability in students and will enable them to establish the principles which will promote intellectual, moral and emotional responsibility. To this end, in the challenging task of educating students, critical

thinking is a crucial element which must be the goal of school administrators, teachers, students and parents (Troter, 1986). The call for the development of higher order thinking skills is urgent. Teaching and learning can improve only if critical thinking skills are improved in both teachers and students (Walsh & Paul, 1989).

The literature is replete with a number of studies that have investigated critical thinking skills of college students who have been educated in K-12 American schools over the last decade (e.g., Brabeck, 1981; Farley & Elmore, 1992; Follert & Colbert, 1983; Frost, 1989; Jones, 1988; Keeley, 1992; Keeley, Browne, & Kreutzer, 1982; Kuhara-Kojima & Hatano, 1985; MacPhail-Wilcox, Dreyden & Eason, 1990; Olsen, 1990; Outz, 1992; Pascarella, 1987; Raburn & Van-Schuyver, 1984; Spaulding & Kleiner, 1992; Steward & Al-Abdulla, 1989; Wells, 1983; Wright, 1989). But a thorough review of this research base reveals that virtually all of the samples of college students were drawn from state-supported institutions of higher learning with non-religious affilitations. We found none that had investigated critical thinking among college students enrolled in private, *Christian* colleges (see authors' note). In addition, researchers have focused almost entirely on students who had received their elementary and secondary education in conventional schools, not from other alternative forms of schooling such as home schools.

Finally, these studies investigated variables that been found to influence critical thinking, including grade point average (GPA), American College Test (ACT) scores, college education, and computer programming courses, to name a few. Notably absent from these studies, though, are any investigations of the effect of educational setting (i.e., prior educational background) on students' critical thinking skills. Yet Adler (1984) and Walsh and Paul (1989) argue that critical thinking is promoted through curriculum and its many

elements such as educational philosophy, goals, objectives, lesson plans, assessment, textbooks, etc., all of which may vary from one type of educational setting to another. The possible effect of educational setting on critical thinking skills is a legitimate area of inquiry, for prior research has established the influence of educational setting on other instructional variables. For example, we know that educational setting may affect teaching behaviors and outcomes (Brookhart & Loadman, 1989; Smith & Cranton, 1992; Sutton, McKinney & Hallahan, 1992;), student learning outcomes (Howe & Disinger, 1988), and test scores (Kleinfield, 1991).

Therefore, the purpose of this study was to determine the differences in selected critical thinking skills among freshman Christian college students who graduated from various educational settings (i.e., Christian schools, public schools, Accelerated Christian Education [ACE] schools, and home schools). Such an investigation would not only fill a void in the present research base, but it would point out specific critical skill strengths and weaknesses among these various groups. The results of this study should benefit both Christian educators and home educators, in particular, as they continue to develop and refine their educational programs and curricula.

Methodology

The original sample for this study included 864 first time freshman students who were enrolled in a large liberal arts, *Christian* university in the Southeast during the fall semester of the 1993-94 school year. We eliminated 75 students from the outset of the investigation, since we could not ascertain the primary type of educational setting from which these students received their high school instruction. Therefore, our final sample consisted of 789 freshman students. Their predominate high school educational setting

(either public school, conventional Christian school, Accelerated Christian Education [ACE] school, or home school) was determined as follows: (a) all four years of high school instruction were conducted in one educational setting (N=695); (b) three of the four years of high school instruction were conducted in one educational setting (N=91); or (c) two-thirds of the total high school credits were earned in one educational setting (N=3).

The four groups of students formed according to high school educational setting included 486 students from conventional Christian schools, 195 students from public schools, 50 students from ACE schools, and 58 students from home schools, for a total of 789 students. The groups and their basic demographic characteristics are provided in Table 1.

Insert Table 1 here

Based on findings from analysis of variance ($F=1.83$, $df=3,785$, $p=.142$), the groups did not differ significantly on mean *American College Testing* (ACT, 1992) composite scores.

The *California Critical Thinking Skills Test* (CCTST, Facione, 1992), a 45-minute, 34-item (multiple choice) standardized instrument was administered to all subjects in the sample to assess their core critical thinking skills. The test produced scores in the following critical thinking skill domains: (a) overall critical thinking cognitive score, (b) analysis; (c) evaluation; (d) inference; (e) deductive reasoning; and (f) inductive reasoning. Facione (1990b) reports an internal consistency reliability figure of .71 (KR-20 Alpha) on Form B (which is the form that was adopted for use in the present study) of the CCTST. Pretest and posttest experiments using the CCTST on students enrolled at California State

University at Fullerton during the 1989-90 school year along with a Delphi report on critical thinking that included participation by 46 leading theorists provides evidence that the instrument possesses sufficient content, construct, and concurrent validity (Facione, 1990a, 1990b). According to Carter-Wells (1992), the CCTST has been characterized as the best commercially-produced critical thinking skills assessment instrument available.

The independent variables for this study were the groups of students determined by educational setting. The dependent variables were the resulting six mean CCTST domain scores for each of the four groups. Three hypotheses were formed, and three statistical tests were conducted to test for group differences on mean critical thinking skill scores. We tested the first hypothesis (i.e., there were no statistically significant differences among the four groups of freshmen from various educational settings on their mean overall CCTST critical thinking score) by conducting an analysis of variance (ANOVA). We tested the second hypothesis (i.e., there were no statistically significant differences among the groups of freshmen on their CCTST analysis, evaluation and inference subscale mean scores) by conducting a multivariate analysis of variance (MANOVA). We tested the third hypothesis (i.e., there were no statistically significant differences among the groups of freshmen on their CCTST deductive reasoning and inductive reasoning subscale mean scores) by conducting a second and final MANOVA. The alpha level for the F ratio in the ANOVA test and for the Wilks' Lambdas in each of the MANOVA tests was set at $p < .05$.

The statistical program SYSTAT (Wilkinson, 1987) was used for computation and analysis of data. The CCTST test responses for each of the students in the sample were gathered through the use of answer sheets and scored with a Scantron machine. The primary investigator entered these data in the computer for analysis. Interrater reliability was

established by having three graduate students not connected with the study to check every 9th test protocol to determine the consistency with which the scores had been entered into the data base by the investigator. The resulting interrater reliability figure (calculated by dividing the number of agreements by the number of agreements plus disagreements) for each of the six critical thinking scores ranged from .98 to 1.00.

Results

The means and standard deviations for each of the four student groups across the six critical thinking scores from the CCTST are provided in Table 2.

Insert Table 2 here

The results of the ANOVA are given in Table 3. Although the students who were educated in home schools had a slightly higher overall mean critical thinking score (X=14.48) than that of students who were from public schools, Christian schools, and ACE schools, the results of the ANOVA test revealed that there were no significant differences among the groups on this critical thinking score (F=1.56, df=3,785, p=0.19).

Insert Table 3 here

The results of the two MANOVA tests (see Table 4) that compared the groups across the three critical thinking scores of analysis, evaluation, and inference produced no significant differences (Wilks' Lambda=0.988, F=1.026, df=9,1905, p=0.41). Similarly, there were no significant differences among the groups across the deductive reasoning and

inductive reasoning mean scores (Wilks' Lambda=0.989, F=1.428, df=6,1568, p=0.20) in the second MANOVA. Based on these findings, all three null hypotheses formulated for this investigation were retained.

Insert Table 4 here

Discussion

This study sought to fill a void in the current critical thinking research base by investigating college students enrolled in a large, private, *Christian* university and how their critical thinking skills varied based on prior high school educational setting. Our twofold goal in this study was to determine: (a) the extent of critical thinking skills among post-secondary students educated in different educational settings; and (b) if there were significant differences among the different groups on various critical thinking variables.

With regard to our first goal, Facione (1992) advises that, in order to determine whether the derived critical thinking scores from the CCTST are at an acceptable level, local norms should be developed in the context of the particular curricula adopted by the individual school system. Nonetheless, he provides suggested corresponding percentile rankings for the overall CCTST score. When applied to the mean overall critical thinking raw scores gathered from the four groups in our study, the respective percentiles are as follows: Home school group (40th percentile); Christian school group (40th percentile); ACE school group (31st percentile); and public school group (31st percentile). It was somewhat disheartening to us that none of the percentiles for any of the four groups were at or above the 50th percentile. One might have expected that the percentiles would have been

higher, especially given the academically rigorous reputation of the institution that participated in this study and since the sample of students was both nationally and regionally representative (see Table 1).

We found no significant differences among our groups on the different critical thinking skills, including deductive and inductive reasoning skills. This finding may be explained in part by Olsen's (1990) and Kuhara-Kojima and Hatano's (1985) studies which concluded that general knowledge is ineffective as opposed to domain-specific knowledge in the development of thinking skills. It may well be that measuring coverage of material proposed by a curriculum in a general fashion (for which our variable of educational setting served as a proxy measure) without giving proper attention to measuring the mastery of specific subject matter may be why we found no differences. The development of deductive and inductive reasoning may require more than the simple exposure to general knowledge.

Based on the results of our analyses, one may conclude that educational setting as a whole does not account for differences in critical thinking skills of college students. On the acceptance of this finding, however, one also has to consider the limitations of this study. First, the results of the CCTST test administered in this study are limited to the students' willingness and ability to respond. We assumed that the students in our sample answered the questions on the CCTST truthfully, providing an accurate reflection of their critical thinking abilities. Second, the focus of this study was on determining differences in selected critical thinking skills among Christian college students who had graduated from one of four types of high school settings. Although it is through the various elements of curriculum that critical thinking skills can be developed (Walsh & Paul, 1989), no attempt was made to control the many variables present in each of these educational settings. Upon the results of

this study, future investigators may choose to concentrate on specific instructional elements subsumed within an educational setting such as curricula, textbooks, teacher experience, methodology, etc.

That there were no significant differences among the student groups across the various critical thinking skill scores might be troublesome to certain individuals and/or groups of educators. For example, Christian school proponents may be somewhat disappointed, given the claim that they have students who have achieved academically at a level "'two to four years' ahead of the public school students" (Stoker & Splawn, 1980, p. 22). But for home educators who "are routinely harassed by their local school district or law enforcement officials" (Klicka, 1993, p. 230) and who continue to be criticized and harangued for their nonconventional approach to education, it is a most encouraging finding. Combined with research that substantiates their above average achievement on standardized tests (Ray, 1993), our finding that home educated students do not differ significantly on critical thinking skills from their conventionally educated counterparts surely offers increasingly strong validation that home education is a viable and effective educational alternative.

References

Adler, M. J. (Ed.). (1984). *The Paideia Program - An educational syllabus*. New York: MacMillan.

American College Testing. (1992). *ACT assessment*. Iowa City, IA: American College Testing.

Brabeck, M. M. (1981). *The relationship between critical thinking skills and development of reflective judgment among adolescent and adult women*. Paper presented at the 39th Annual Convention of the American Psychological Association, Los Angeles, CA. (ERIC Document Reproduction Service No. ED 216 259)

Brookhart, S. M., & Loadman, W. E. (1989, March). *Work perceptions of university and public school educators*. Paper presented at the 73rd Annual Meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 309 720)

Carter-Wells, J. (1992). The Carter-Wells matrix. Inquiry: *Critical Thinking Across The Disciplines, 9(1)*, 13.

Facione, P. A. (1990a). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*. Millbrae, CA: California Academic Press.

Facione, P. A. (1990b). *The California Critical Thinking Skills Test - college level, Technical report #1. Experimental validation and content validity*. Millbrae, CA: California Academic Press. (ERIC Document Reproduction Service No. ED 327 549)

Facione, P. A. (1992). *The California Critical Thinking Skills Test. Form A and Form B.* Millbrae, CA: California Academic Press.

Farley, M. J., & Elmore, P. B. (1992). The relationship of reading comprehension to critical thinking skills, cognitive ability and vocabulary for a sample of underachieving college freshmen. *Educational and Psychological Measurement, 52,* 921-931.

Follert, V. F., & Colbert, K. R. (1983). *An analysis of the research concerning debate training and critical thinking improvements.* Paper presented at the 69th Annual Meeting of the Speech Communication Association, Washington, DC. (ERIC Document Reproduction Service No. ED 238 058)

Frost, S. H. (1989). The effects of academic advising and the frequency of faculty contact on the cognitive development of college freshmen (Doctoral dissertation, University of Georgia, 1989). *Dissertation Abstracts International, 51,* 87A.

Grice, G. L., & Jones, M. A. (1989). Teaching thinking skills: State mandates and K-12 curriculum. *The Clearing House, 62,* 337-341.

Holmes, A. R. (1975). *The idea of a Christian college* (Rev. ed.). Grand Rapids, MI: Eerdmans.

Howe, R. W., & Disinger, J. F. (1988). *Teaching environment education using out-of-school settings and mass media.* Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environment Education. (ERIC Document Reproduction Service No. ED 309 720)

Jones, P. K. (1988). *The effect of computer programming instruction on the development of generalized problem solving skills in high school students.* (ERIC Document Reproduction Service No. ED 302 221)

Keeley, S. M. (1992). Are college students learning the critical thinking skill of finding assumptions? *College Student Journal, 26,* 316-322.

Keeley, S. M., Browne, M. N., Kreutzer, J. S. (1982). A comparison of freshmen and seniors on general and specific essay tests of critical thinking. *Research in Higher Education, 26,* 3-29.

Kleinfield, J. (1991). *The Alaska statewide student testing program: Are the tests biased?* Anchorage, AK: Alaska Educational Research Association. (ERIC Document Reproduction Service No. ED 335 183)

Klicka, C. (1993). *The right choice: The incredible failure of public education and the rising hope of home schooling - An academic, historical, practical, and legal perspective.* Gresham, OR: Noble Publishing.

Kuhara-Kojima, K., & Hatano, G. (1985, March). *Domain-specific knowledge and general skills in reading comprehension.* Paper presented at the 69th Annual Meeting of the American Educational Research Association, Chicago, IL. (ERIC Document Reproduction Service No. ED 266 419)

MacPahail-Wilcox, B., Deyden, J., & Eason, E. (1990). An investigation of the paideia program effects on students' critical thinking skills. *Educational Considerations, 17(2),* 61-67.

Marzano, R. J., & Arredondo, D. E. (1986). Restructuring schools through the teaching of thinking skills. *Educational Leadership, 43(8),* 20-26.

Newmann, F. M. (1988). Higher order thinking in the high school curriculum. *NASSP Bulletin, 72(508),* 58-64.

Norris, S. P. (1985). Synthesis of research on critical thinking. *Educational Leadership, 42(8),* 40-45.

Olsen, S. A. (1990, October). *Examining the relationship between college core course areas and sophomore critical thinking test scores.* Paper presented at the Annual Conference of the American Evaluation Association, Washington, DC. (ERIC Document Reproduction Service No. ED 328 145)

Outz, K. M. (1992). A causal inference model of critical thinking ability of college students (Doctoral Dissertation, Georgia State University, 1992). *Dissertation Abstracts International, 53,* 2747A.

Pascarella, E. T. (1987, November). *The development of critical thinking: Does college make a difference?* Baltimore, MD: Association for the Study of Higher Education. (ERIC Document Reproduction Service No. ED 292 417)

Paul, R. W. (1990). *Critical thinking: What every person needs to survive in a rapidly changing world.* Rohnert Park, CA: Center for Critical Thinking and Moral Critique.

Raburn, J., & Van-Schuyver, B. (1984). *The relationship of reading and writing to thinking among university students taking English composition.* (ERIC Document Reproduction Service No. ED 273 978)

Rankin, J. (1991, August 4). A call for higher order thinking. *The Washington Post,* pp. 19-22.

Ray, B. (1993). Practices and effects of home education in the United States of America: A synthesis of recent research. *Journal of Research on Christian Education, 2(1),* 135-154.

Smith, R. A., & Cranton, P. A. (1992). Students' perceptions of teaching skills and overall effectiveness across instructional settings. *Research in Higher Education, 33,* 747-764.

Spaulding, S. C., & Kleiner, K. A. (1992). The relationship of college and critical thinking: Are critical thinkers attracted or created by college disciplines? *College Student Journal, 26(2),* 162-166.

Stewart, R. J., & Al-Abdulla, Y. (1989). *An examination of the relationship between critical thinking and academic success on a university campus.* (ERIC Document Reproduction Service No. ED 318 936)

Stoker, W. M., & Splawn, R. (1980). *A study of Accelerated Christian Education schools in Northwest Texas.* (ERIC Document Reproduction Service No. ED 206 095)

Sutton, J. P., McKinney, J. D., & Hallahan, D. P. (1992). Effects of grade level and educational settings on behaviors of beginning learning disabilities teachers. *Learning Disabilities Research and Practice, 7,* 16-24.

Trotter, G. (1986). I thought what? *The Clearing House, 60(2),* 76-78.

Walsh, D., & Paul, R. W. (1989). *The goal of critical thinking: From educational ideal to educational reality.* Washington, DC: American Federation of Teachers.

Wells, K. M. (1983, April). *The development of a critical thinking skills performance assessment: An interdisciplinary approach to validating achievement of school goals.* Paper presented at the 67th Annual Meeting of the American Educational Research Association, Montreal, Quebec. (ERIC Document Reproduction Service No. ED 229 424)

Wilkinson, L. (1987). *SYSTAT: The system for statistics.* Evanston, IL: SYSTAT.

Wright, P. S. (1989). Selected correlates of intellectual development of college freshmen (Doctoral dissertation, University of Connecticut, 1989). *Dissertation Abstracts International, 50,* 3498A.

Table 1

Sample Characteristics by Groups of Freshmen

Characteristic Variable	Christian School Sample (N=486)	Public School Sample (N=195)	ACE School Sample (N=50)	Home School Sample (N=58)
Age (years)	18.06	18.73	18.06	18.00
Gender				
Male	229	87	23	32
Female	257	108	27	26
Race				
Caucasian	470	179	46	53
Black	3	3	0	0
Asian	3	4	0	0
Other	7	6	3	3
Region/Country				
Northcentral	149	58	13	14
Northeast	111	49	16	5
South	183	56	14	21
West	31	22	4	7
U.S. Territories	4	1	0	0
Foreign Countries	4	9	3	10
ACT *	21.54	21.00	20.70	22.17

* Group means for *American College Testing* composite scores.

NOTE. Two students did not specify age, nine students did not specify race, and five students did not specify home state (hence, region could not be determined).

Table 2

Means and Standard Deviations of College Freshmen Scores on CCTST Subscales Grouped According to Prior High School Educational Setting

Critical Thinking Subscale	Christian School Freshmen	Public School Freshmen	ACE School Freshmen	Home School Freshmen
Analysis	4.46 (1.77)	4.20 (1.68)	4.18 (1.88)	4.51 (1.67)
Evaluation	5.44 (2.27)	5.01 (2.27)	5.46 (2.10)	5.43 (2.40)
Inference	4.52 (2.06)	4.39 (2.08)	4.22 (2.22)	4.53 (2.29)
Deductive Reasoning	6.91 (2.74)	6.44 (2.76)	6.24 (2.93)	6.82 (2.61)
Inductive Reasoning	5.61 (2.38)	5.44 (2.20)	5.86 (2.33)	5.75 (2.53)
Overall	14.43 (4.69)	13.61 (4.70)	13.86 (4.81)	14.48 (4.79)

Note: Numbers in parentheses represent standard deviations.

Table 3

Analysis of Variance for CCTST Overall Score

CCTST Subscale	SS	df	MS	F	Signif.
Overall	103.93	3	36.64	1.561	0.197
	17422.00	785	22.19		

Table 4

Multivariate Analyses of Variance for Analysis, Evaluation, Inference, Deductive Reasoning, and Inductive Reasoning CCTST Subscales

CCTST Subscales	Wilks' Lambda	df	F	Signif.
Analysis Evaluation Inference	0.988	9,1905	1.026	0.417
Deductive Reasoning Inductive Reasoning	0.989	6,1568	1.428	0.200

Authors' Note

In contrast to a secular college, Holmes (1975) characterizes a *Christian* college as one which provides "an education that cultivates the creative and active integration of [Christian] faith and learning, of faith and culture" (p. 6).

Biographical Sketches

Dr. Joe P. Sutton is chairman of the Department of Special Education, School of Education, Bob Jones University. He earned his Ph.D. in special education from The University of Virginia in 1989. Dr. Sutton is president of *Exceptional Diagnostics*, a special education testing and consulting firm serving the needs of a national clientele of Christian/home educators.

Dr. Paulo C. M. de Oliveira completed his Ed.D. in educational administration at Bob Jones University in 1994 and is currently employed at the Bob Jones University Press Testing Service.